CLAIMS

1.   (Currently amended) At a station of a contention-based WLAN system in which the station is adapted to operate in awake and doze states, a method comprising:

(A)   with the station in the doze state, transitioning the station from the doze state to the awake state; and

(B)   transmitting to an access point (AP) of the system a first frame, wherein a designated bit in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP, wherein:

step (A) comprises:

starting a timer when the station has transitioned into the doze state; and

if there is no data available for transmission from the station to the AP, then transitioning the station from the doze state to the awake state when the timer reaches a threshold value; and

step (B) is performed after the station has transitioned to the awake state due to the timer reaching the threshold value but before the station receives a next frame from the AP.

2.   (Original) The method of claim 1, wherein the contention-based WLAN system conforms to an IEEE 802.11 standard.

3.   (Original) The method of claim 1, wherein the contention-based WLAN system conforms to an extension of an IEEE 802.11 standard.

4.   (Original) The method of claim 1, wherein steps (A) and (B) are performed independent of any beacon schedule for the system.

5.   (Original) The method of claim 1, further comprising receiving from the AP an acknowledgement frame corresponding to the first frame.

6.   (Currently amended) The method of claim 5, wherein:

a designated more data bit of an IEEE 802.11 standard in the acknowledgement frame informs the station whether the AP has data to transmit to the station;

if the more data bit indicates that the AP has the data, then the method comprises keeping the station in the awake state and available to receive from the AP at least one frame corresponding to the data; and

if the more data bit indicates that the AP does not have the data, then the method comprises transitioning the station to the doze state upon receipt of the acknowledgement frame.

7.   (Currently amended) The method of claim 1, wherein:

step (A) further comprises:

~~when~~ if data ~~is~~ has become available for transmission from the station to the AP, then transitioning the station to the awake state upon said availability; and

for step (B), the first frame corresponds to the data~~; and~~

~~when there is no data available for transmission from the station to the AP, the first frame is a null frame.~~

8.   (Currently amended) The method of claim 1, wherein:

~~step (A) comprises:~~

~~starting a timer; and~~

~~when there is no data available for transmission from the station to the AP, transitioning the station from the doze state to the awake state after the timer reaches a threshold value; and~~

for step (B), the first frame is a null frame.

9.   (Original) The method of claim 8, wherein the threshold value is less than an inter-beacon time interval.

10.   (Original) The method of claim 1, wherein the designated bit is a power management bit of an IEEE 802.11 standard.

11.   (Original) The method of claim 1, wherein the designated bit is a more data bit of an IEEE 802.11 standard.

12. (Original) The method of claim 1, further comprising:

(C) with the station in the awake state and the AP informed that the station is in the awake state, transmitting to the AP a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state; and

(D) transitioning the station from the awake state to the doze state.

13. (Currently amended) At an access point (AP) of a contention-based WLAN system in which a station is adapted to operate in awake and doze states, a method comprising:

(A) receiving from the station a first frame, wherein a more data ~~designated~~ bit of an IEEE 802.11 standard in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP; and

(B) transmitting to the station an acknowledgement frame corresponding to the first frame, wherein a designated bit in the acknowledgement frame informs the station whether the AP has data to transmit to the station.

14. (Currently amended) The method of claim 13, wherein the contention-based WLAN system conforms to an extension of ~~an~~ the IEEE 802.11 standard.

15. (Currently amended) The method of claim 13 ~~14~~, wherein:

the designated bit is a more data bit of the IEEE 802.11 standard; and

if the designated bit indicates that the AP has the data, then the method comprises transmitting to the station at least one frame corresponding to the data, wherein the station continues to remain in the awake state to be available to receive said at least one frame.

16. (Original) The method of claim 13, wherein steps (A) and (B) are performed independent of any beacon schedule for the system.

17. (Original) The method of claim 13, wherein:

when data is available for transmission from the station to the AP, the first frame corresponds to the data; and

when there is no data available for transmission from the station to the AP, the first frame is a null frame.

18.   (Currently amended) A station in a contention-based WLAN system, the station adapted to operate in awake and doze states and comprising:

(A)   a processor, wherein, with the station in the doze state, the processor configures the station to transition from the doze state to the awake state; and

(B)   a transceiver, wherein the processor configures the transceiver to transmit to an access point (AP) of the system a first frame, wherein a designated bit in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP, wherein:

the processor is adapted to:

start a timer when the station has transitioned into the doze state; and

if there is no data available for transmission from the station to the AP, then configure the station to transition from the doze state to the awake state when the timer reaches a threshold value; and

the first frame is transmitted after the station has transitioned to the awake state due to the timer reaching the threshold value but before the station receives a next frame from the AP.

19.   (Canceled)

20.   (Currently amended) An access point (AP) of a contention-based WLAN system in which a station is adapted to operate in awake and doze states, the AP comprising a processor and a transceiver, wherein the processor configures the transceiver:

(A)   to receive from the station a first frame, wherein a more data ~~designated~~ bit of an IEEE 802.11 standard in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP; and

(B)   to transmit to the station an acknowledgement frame corresponding to the first frame, wherein a designated bit in the acknowledgement frame informs the station whether the AP has data to transmit to the station.

21.   (Canceled)

22.   (New) The method of claim 20, wherein:

the designated bit is a more data bit of the IEEE 802.11 standard; and

if the designated bit indicates that the AP has the data, then the processor configures the transceiver to transmit to the station at least one frame corresponding to the data, wherein the station continues to remain in the awake state to be available to receive said at least one frame.

23.   (New) The method of claim 18, wherein:

the processor configures the transceiver to receiving from the AP an acknowledgement frame corresponding to the first frame;

a more data bit of an IEEE 802.11 standard in the acknowledgement frame informs the station whether the AP has data to transmit to the station;

if the more data bit indicates that the AP has the data, then the processor configures station to remain in the awake state to be available to receive from the AP at least one frame corresponding to the data; and

if the more data bit indicates that the AP does not have the data, then the processor configures the station to transition to the doze state upon receipt of the acknowledgement frame.